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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/298,603	04/23/1999	BORIS KLOTS	50277210	2232

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EXAMINER

VU, THONG H

ART UNIT	PAPER NUMBER
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2142

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DATE MAILED: 10/29/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

PR4

Office Action Summary	Application No.	Applicant(s)	
	09/298,603	KLOTS ET AL.	
	Examiner	Art Unit	
	Thong H Vu	2142	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 03 July 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-4,6-9,16-23,25-28 and 30-32 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4,6-9,16-23,25-28 and 30-32 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) ✓
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 18
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

1. Claims 1,-4,6-9,16-23,25-28, 30-32 are pending.
2. In view of the Appeal brief filed on 7/3/03, PROSECUTION IS HEREBY REOPENED. A Non-final Office Action is set forth below.

To avoid abandonment of the application, appellant must exercise one of the following two options:

- (1) file a reply under 37 CFR 1.111 (if this Office action is non-final) or a reply under 37 CFR 1.113 (if this Office action is final); or,
- (2) request reinstatement of the appeal.

If reinstatement of the appeal is requested, such request must be accompanied by a supplemental appeal brief, but no new amendments, affidavits (37 CFR 1.130, 1.131 or 1.132) or other evidence are permitted. See 37 CFR 1.193(b)(2).

Claim Rejections - 35 USC § 112

3. Claims 1,16,20 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention (i.e.: It is unclear that the first node or second node sends a second work request to the third process on the third node).
4. Claims 30,31,32 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention (i.e.: It is unclear that the updated first work request is performed with or without mapping data).

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5. Claims 30,31,32 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. (i.e.: an updated first work request is not described in specification).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 1-4,6-9,16-23,25-28 are rejected under 35 U.S.C. § 103 as being obvious over Boll et al [Boll 5,644,720] in view of Baylor et al [Baylor 5,742,812].

7. As per claim 1, Boll discloses a method for processing data on a distributed computing system that includes a plurality of nodes [Boll, a plurality of servers, col 30,32,34,36, Fig 2], the method comprising the steps of:

maintaining mapping (i.e.: identifying) data that specifies work that can be performed by each of the plurality of nodes [Boll, identifying a set of attributes for services, col 3 line 55-col 4 line 19];

in response to receiving a first work request to perform first work from a first process on a first node (i.e.: a client application) from the plurality of nodes, determining based upon the first work and the mapping data, that the first work is to be performed

on a second node (i.e.: a server) from the plurality of nodes [Boll, a plurality of servers with databases include redundant data as necessary to facilitate optimal servicing of request from client applications, col 3 lines 25-54];

providing the first work request to a second process on the second node, wherein the first work request specifies that the first process is to directly receive results of the first work [Boll, the communications between client application 12 and server 30 is either via interface 24 or direct path 38, col 3 lines 25-49 Fig 1];

determining based upon the first work and the mapping data, that the first work is also to be performed on a third node from the plurality of nodes [Boll, the other (i.e.: third, fourth) server with redundant database could perform the client request and specified data, col 3 lines 25-49], Boll also taught a client request may be answered by one or several servers as defines a work distribution scale or load balancing range [Boll, col 4 lines 20-55, col 5 lines 60-65]

the (second) work request specifies that results of the first work performed on the third node is provided directly to the first process [Bol, direct communication path 38 between client application 12 and server 30 col 3 lines 25-49 Fig 1]

However Boll does not explicitly disclose providing a second work request to a third process on the third node wherein the second work request specifies that results of the first work performed on the third node is provided directly to the first process. It was well-known in the art that in a network environment includes a plurality of clients and server or intermediate nodes, a second request was sent to specify some criteria which

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is different to the first request as taught by Baylor [Baylor col col 10 lines 1-65][see Kusuda references, col 20 line 30-col 2 line 43].

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to incorporate the technique of using the second request which specify the different to the first request as taught by Baylor into the Boll's apparatus. Doing so would facilitate optimal use of client servers in answering the request by sending the result directly to client or via the interface as an alternate path.

8. Claims 16,20 contain the similar limitations set forth of method claim 1, except the director (or one or more instructions) [Boll, communication interface24 with database 26, Fig 1]. Therefore, claims 16,20 are rejected for the similar rationale set forth in claim 1.

9. As per claims 2,21 Boll discloses including the steps of in response to receiving a second request (updated request) to perform second work from the first process, determining that the second work is to be performed on a third node from the plurality of nodes, and providing the second request to a third process on the third node, wherein the second request specifies that the first process is to receive results of the second work directly from the third process. It is clearly that when the first server has in-service, maximum-service, out of-service then the other client requests (i.e.: a second or an updated requests) will be accepted by other servers (second, third or fourth server) as defines a work distribution scale or load balancing range [Bol, col 5 lines 60-65].

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10. As per claims 3,22 Boll discloses including the steps of in response to receiving a second request to perform second work from a third process on a third node from the plurality of nodes, determining based upon the second work and the mapping data, that the second work is to be performed on the second node, and providing the second request to the second process, wherein the second request specifies that the third process is to receive results of the second work directly from the second. It is clearly that when the first server has in-service, maximum-service, out of-service then the client request (i.e.: second or updated request) is accepted by other server (second, third or fourth server) as defines a work distribution scale or load balancing range [Bol, col 5 lines 60-65].

11. As per claims 4,23 Boll discloses including the steps of in response to receiving a second request to perform second work from a third process on a third node from the plurality of nodes, determining based upon the second work and the mapping data, a fourth node from the plurality of nodes on which the second work is to be performed, and providing the second request to a fourth process on the fourth node, wherein the second request specifies that the third process is to receive results of the second work directly from the. It is clearly that when the first server has in-service, maximum-service, out of-service then the client request (i.e.: second or updated request) is accepted by other servers (a second, third or fourth server) as defines a work distribution scale or load balancing range [Bol, col 5 lines 60-65].

12. As per claims 6,25 Boll discloses the step of determining that the first work is to be performed on a second node includes the step of determining one or more resources required to perform the first work, and determining which of the plurality of nodes is allowed to perform the first work on the one or more resources as inherent feature of director or communication interface 24 with database 26 [Boll Fig 2].

13. As per claims 7,26 Boll discloses the step of determining that the first work is to be performed on a second node from the plurality of nodes includes the step of a director determining that the first work is to be performed on a second node from the plurality of nodes, and the step of providing the first work request to a second process on the second node includes the step of the director providing the first work request to a second process on the second node as inherent feature of director or communication interface 24 with database 26 [Boll Fig 2].

14. As per claims 8,27 Boll discloses the step of upon completion of the first work, the second process providing the results of the first work directly to the first process [Boll col 3 lines 25-54].

15. As per claims 9,28 Boll discloses the first work request is a remote procedure call as inherent feature of client-server communications.

16. As per claim 17, Boll discloses the director (i.e.: communication interface) is further configured to provide the first work request to the second process as inherent feature of communication interface 24 with database 26 [Boll Fig 2].

17. As per claim 18, Boll discloses the director is further configured to generate a second work request to requests that the second process perform the first work and provide the first results directly to the first process, and provide the second work request to the second process as inherent feature of director or communication interface 24 with database 26 [Boll Fig 2].

18. As per claim 19, Boll discloses resource data that specifies the access rights of the plurality of nodes relative to resources as inherent feature of client-server communications.

19. As per claim 31, Boll discloses the similar limitations set forth of method claim 1 [see rejection claim 1], except generating an updated first work request that specifies that the first process is to directly receive results of performing the first work [Boll, each client server periodically reports its operational state to the communication interface 24 which updates interface database 26]. It is clearly that includes the second or update of the first request is processed by the server which returns the result via the direct path to client [Bol col 3 lines 25-49], and providing the updated first work request to a second process on the second node (i.e.: the first server), in case of the first server was in-

service, maximum- service, out of-service then the client request (i.e.: updated request) will be accepted by other servers as defines a work distribution scale or load balancing range [Bol, col 5 lines 60-65].

20. Claims 30 and 32 are rejected for the similar rationale set forth in claim 31.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

21. Claims 1-4,6-9,16-23,25-28,30-32 are rejected under 35 U.S.C. § 103 as being obvious over Pitkin et al [Pitkin 5,341,477] in view of Nguyen [6,535,916 B1].

22. As per claim 1, a method for processing data on a distributed computing system includes a plurality of nodes [Pitkin, a plurality of servers S1...Sn, Fig 2], the method comprising the steps of:

maintaining mapping data that specifies work that can be performed by each of the plurality of nodes [Pitkin, the broker examines these connection entries to determine each coupled server's capacity or availability to deliver a requested service, col 6 line 54-col 7l line 7];

in response to receiving a first work request to perform first work from a first

process on a first node from the plurality of nodes, determining based upon the first work and the mapping data, that the first work is to be performed on a second node from the plurality of nodes [Pitkin, the prediction is compared to desired performance for each service to check if the server matches the performance limitations, col 5 lines 35-50];

However Pitkin does not explicitly teaching providing the first work request to a second process on the second node, wherein the first work request specifies that the first process is to directly receive results of the first work;

determining based upon the first work and the mapping data, that the first work is also to be performed on a third node from the plurality of nodes, and providing a second work request to a third process on the third node, wherein the second work request specifies that results of the first work performed on the third node are to be provided directly to the first process.

A skilled artisan would have motivation to improve the communication process via a large network such as Internet and found Nguyen teaching. Nguyen discloses a distributed computing system (Internet) with a plurality of servers [Nguyen, web server 1,2,3,14,16,18 Fig 2] wherein the Web servers or application server provide the searching or mapping data and send the client request to advertising server which returns the result (i.e.:coupons) directly to client [Nguyen, col 6 lines 16-25]. It is clearly that the middlewares (web servers, application servers) determines the search request (the first work and mapping data) will be responded by the advertising servers (the second or third node).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to incorporate the technique of return the result directly to client as taught by Nguyen into the Pitkin's apparatus in order to utilize the communication between a plurality of clients and servers. Doing so would provide a quick and simple process to delivery the result of search request to client via Internet.

23. Claims 16,20 contain the similar limitations set forth of method claim 1, except the director (or one or more instructions) [Pitkin, broker 30, Fig 2]. Therefore, claims 16,20 are rejected for the similar rationale set forth in claim 1.

24. As per claims 2,21 Pitkin-Nguyen disclose including the steps of in response to receiving a second request to perform second work from the first process, determining that the second work is to be performed on a third node from the plurality of nodes, and providing the second request to a third process on the third node, wherein the second request specifies that the first process is to receive results of the second work directly from the third process as inherent feature of directly response.

25. As per claims 3,22 Pitkin-Nguyen disclose including the steps of in response to receiving a second request to perform second work from a third process on a third node from the plurality of nodes, determining based upon the second work and the mapping data, that the second work is to be performed on the second node, and providing the second request to the second process, wherein the second request specifies that the

third process is to receive results of the second work directly from the second process as inherent feature of directly response.

26. As per claims 4,23 Pitkin-Nguyen disclose including the steps of in response to receiving a second request to perform second work from a third process on a third node from the plurality of nodes, determining based upon the second work and the mapping data, a fourth node from the plurality of nodes on which the second work is to be performed, and providing the second request to a fourth process on the fourth node, wherein the second request specifies that the third process is to receive results of the second work directly from the fourth as inherent feature of directly response.

27. As per claims 6,25 Pitkin-Nguyen disclose the step of determining that the first work is to be performed on a second node includes the step of determining one or more resources required to perform the first work, and determining which of the plurality of nodes is allowed to perform the first work on the one or more resources.

28. As per claims 7,26 Pitkin-Nguyen disclose the step of determining that the first work is to be performed on a second node from the plurality of nodes includes the step of a director determining that the first work is to be performed on a second node from the plurality of nodes, and the step of providing the first work request to a second process on the second node includes the step of the director providing the first work request to a second process on the second [Pitkin, broker 30, Fig 2].

29. As per claims 8,27 Pitkin-Nguyen disclose the step of upon completion of the first work, the second process providing the results of the first work directly to the first process as inherent feature of directly response.

30. As per claims 9,28 Pitkin-Nguyen disclose the first work request is a remote procedure call as inherent feature of client-server communications.

31. As per claim 17, Pitkin-Nguyen disclose the director is further configured to provide the first work request to the second process [Pitkin, broker 30, Fig 2].

32. As per claim 18, Pitkin-Nguyen disclose the director is further configured to generate a second work request to requests that the second process perform the first work and provide the first results directly to the first process, and provide the second work request to the second process [Pitkin, broker 30, Fig 2].

33. As per claim 19, Pitkin-Nguyen disclose resource data that specifies the access rights of the plurality of nodes relative to resources as inherent feature of compare the availability to deliver a requested service [Pitkin col 6 lines 54-65].

34. As per claim 31, Pitkin-Nguyen disclose the similar limitations set forth of method claim 1 [see rejection claim 1], except generating an updated first work request (i.e.: a

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second work request) that specifies that the first process is to directly receive results of performing the first work. It is clearly that the communication between web client and web server could be designed in a conventional way where the result is sent back to client via the route which it came from or the result is sent directly to client [Nguyen col 6 lines 16-26].

35. Claims 30 and 32 are rejected for the similar rationale set forth in claim 31.

36. Any inquiry concerning this communication or earlier communications from the examiner should be directed to examiner Thong Vu, whose telephone number is (703)-305-4643. The examiner can normally be reached on Monday-Thursday from 7:00AM- 3:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, *David Wiley*, can be reached at (703) 308-5221.

Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (703) 305-9700.

Any response to this action should be mailed to: Commissioner of Patent and Trademarks, Washington, D.C. 20231 or faxed to :

After Final (703) 746-7238

Official: (703) 746-7239

Non-Official (703) 746-7240

Hand-delivered responses should be brought to Crystal Park 11,2121 Crystal Drive, Arlington. VA., Sixth Floor.(Receptionist).

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